Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson BTEC Level 3 Nationals Extended Certificate, Foundation Diploma, Diploma, Extended Diploma

Centre Number

Learner Registration Number

Monday 18 January 2021

Morning (Time: 2 hours) | Paper Reference **31760H**

Information Technology

Unit 1: Information Technology Systems

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 90.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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Answer ALL questions. Write your answers in the spaces provided.

1 Jacky is a student living in shared accommodation with other students.

The student accommodation has access to a shared network with internet access.

The students use both wired and wireless connections to the network.

(a) Identify **two** benefits of using a wired connection rather than a wireless connection to a shared network.

(2)

1

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(b) Identify **two** benefits of using a wireless connection rather than a wired connection to a shared network.

(2)

1

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(c) Jacky travels to college by train and uses her laptop to do internet research during her journey.

The train company provides a free internet connection, however Jacky prefers to set up a personal area network (PAN) between her laptop and mobile phone.

(i) Explain **one** advantage of using a PAN to connect to the internet.

(2)

(ii) Explain **one** disadvantage of using a PAN to connect to the internet.

(2)

Jacky's friend has a tablet computer. Jacky would like to give her friend access to the PAN.

(iii) Describe the steps that they need to follow to allow the friend to gain access.

(4)

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(d) The laptop has many utility programs installed.

Explain the purpose of the **two** given utility programs.

(4)

Disk cleanup

Software firewall

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(e) Jacky uses proprietary software for her word processing and spreadsheet based college assignments. The software is out of date and Jacky is considering replacing it with open source software.

Discuss the implications of installing open source rather than proprietary application software.

(8)

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(Total for Question 1 = 24 marks)

2 Miguel owns a company that produces software for primary school children. He works in an office with other programmers to do this.

They use PCs in the office and Miguel uses a laptop when visiting schools to demonstrate the software to the children.

Each device has:

- a graphical user interface (GUI)
- an optional command line interface (CLI)
- a single-user multi-tasking operating system (OS)
- a hard disk drive (HDD).

(a) Explain the purpose of a user interface.

(2)

(b) Explain **two** benefits of using a GUI rather than a CLI.

(4)

1

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(c) Explain **two** reasons why a single-user multi-tasking OS would be installed on each office PC.

(4)

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(d) Each programmer stores designs on the internal hard disc drive (HDD) on their PC.

The data stored on their PCs can be at risk even when not connected to the internet.

(i) Explain **two** threats to data that can arise when a PC is not connected to the internet.

(4)

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(ii) Miguel is considering moving to a cloud storage system. One benefit of this would be to reduce the threats when storing data to their hard disk drives.

Discuss how moving to a cloud storage system would impact Miguel and the other programmers.

(6)

(Total for Question 2 = 20 marks)

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3 SchFurn sells furniture to schools throughout the UK.

A manager and two administrative staff work in the company office and three sales staff work remotely.

Staff in the company office use PCs for administrative tasks.

Sales staff use laptops when they visit clients to show a range of furniture available and to collect order details.

SchFurn wants a system that will provide:

- wireless connection for three PCs
- a file server
- an email server
- secure remote wireless access for laptops.

(a) Draw a diagram to show the setup of the system.

The diagram should include:

- the devices used by the system
- the connections between the devices
- annotations including the devices and the types of connection.

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Use this space to draw your diagram for Q3a.

(6)

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(b) Glenda is a member of the sales staff. She works remotely from home using a laptop provided by SchFurn.

(i) Every week the sales staff and the office manager hold a meeting using voice over internet protocol (VoIP).

Codecs are used as part of VoIP.

Describe the use of codecs when using VoIP.

(4)

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(ii) A VPN supports the ability of sales staff, such as Glenda, to work remotely.

Discuss the implications to SchFurn of using a VPN to allow sales staff to work remotely.

(6)

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(c) SchFurn holds data about employees and client sales. Legislation is in place to ensure this data is protected.

Discuss the relevant legislation that protects this data, including the company and employee responsibilities.

(8)

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(Total for Question 3 = 24 marks)

4 JKH Bank has several high street branches and provides customers with an online banking service.

Jason, a customer, accesses the online banking service via a portable device.

He has an up-to-date virus checker to protect his data from viruses and other malware when using the online banking service.

(a) Discuss threats to Jason's data when he uses a portable device for online banking.

You should consider:

- threats other than virus and malware attacks
- steps that can be taken to reduce the threats.

(10)

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(b) JKH Bank is considering closing all high street branches and moving solely to its online banking service.

Analyse the implications, other than security of data, for JKH Bank moving to online banking only.

You should consider the implications for:

- customers
- bank employees
- JKH Bank.

(12)

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(Total for Question 4 = 22 marks)

TOTAL FOR PAPER = 90 MARKS

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